



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,896	06/25/2001	Naotoshi Katahara	11115.65647	9344

7590 07/16/2003

Patrick G. Burns, Esq.  
GREER, BURNS & CRAIN, LTD.  
300 South Wacker Dr., Suite 2500  
Chicago, IL 60606

EXAMINER

RODRIGUEZ, GLENDA P

ART UNIT	PAPER NUMBER
----------	--------------

2697

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

SM

# Office Action Summary

Application No.

09/888,896

Applicant(s)

KATAHARA ET AL.

Examiner

Glenda P. Rodriguez

Art Unit

2697

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 25 is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-24 and 26-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 7, 8, 9, 13, 16, 18, 20, 21, 32, 33 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimada (JP 5175565).

Regarding Claim 1, Shimada teaches a disk unit in which an arm having a head on a top is actuated, while a disk is rotated, so that a position of the head is moved with respect to the disk to perform write and read of data to and from the disk by the head (It is inherent that a disk unit has an arm (also called transducer) to perform write/read operations. See Fig. 2, block 5. Shimada teaches a disk unit.), said disk unit comprising:

A temperature sensor for detecting a temperature (Fig. 2, Block 4);

And heating means for heating when said temperature sensor detects a temperature, which is less than a predetermined first temperature (Page 10, [0010]).

Regarding Claim 4, Shimada teaches all the limitation of Claim 1. Shimada further teaches a heating apparatus (Fig. 2, Block 9).

Regarding Claim 7, Shimada teaches all the limitations of Claim 1. Shimada further teaches a disk unit according to claim 1, wherein said disk unit further comprises a communication circuit for communication with a host, and when said temperature sensor detects a temperature which is less than the first temperature, said communication circuit informs the host that heating is performed (Fig. 2, Block 30 and Page 15 [0018] and [0019]. Shimada teaches the use of a host CPU.).

Regarding Claim 8, Shimada teaches all the limitations of Claim 1. Shimada further teaches a disk unit according to claim 1, wherein said disk unit further comprises a control circuit for controlling an operation of said disk unit, and when said temperature sensor detects a temperature which is less than a predetermined second temperature lower than the first temperature, said control circuit stops the operation of said disk (Fig. 2, Block 7 and Page 15, [0018] and [0019]. Shimada teaches that when hard disk is inoperable, the controller emits an OFF signal from an ON signal. The controller monitors the temperature detected by the temperature detector.).

Regarding Claim 9, Shimada teaches all the limitations of Claim 8. Shimada further teaches wherein said disk unit further comprises a communication circuit for communication with a host, and when said temperature sensor detects a temperature which is less than the second temperature, said communication circuit informs the host that said disk unit is not operable (Fig. 2, Elements 7, 29, and 30 and Page 15, [0018] and [0019]. In Fig. 2, Shimada teaches a CPU (30) that has a direct connection (29) to the controller (7), which informs the CPU whenever the hard disk is inoperable because

Art Unit: 2697

of intolerable temperature and will not enable the hard disk unless the temperature is operable.).

Regarding Claim 13, Shimada teaches a disk unit in which an arm having a head on a top is actuated, while a disk is rotated, so that a position of the head is moved with respect to the disk to perform write and read of data to and from the disk by the head, said disk unit comprising:

A temperature sensor for detecting a temperature (Fig. 2, Block 4);

And a heat generation suppressing means for suppressing generation of heat when said temperature sensor detects a temperature exceeding a predetermined third temperature lower (Page 14, [0016]).

Regarding Claim 16, Shimada teaches all the limitations of Claim 1. Shimada further teaches wherein said disk unit further comprises a communication circuit for communication with a host, and when said temperature sensor detects a temperature exceeding the third temperature, said communication circuit informs the host that generation of heat is suppressed (Fig. 2, Elements 7, 29, and 30 and Page 15, [0018] and [0019]. In Fig. 2, Shimada teaches a CPU (30) that has a direct connection (29) to the controller (7), which informs the CPU whenever the hard disk is inoperable because of intolerable temperature and will not enable the hard disk unless the temperature is operable.).

Regarding Claim 18, Shimada teaches a disk unit in which an arm having a head on a top is actuated, while a disk is rotated, so that a position of the head is moved with respect to the disk to perform write and read of data to and from the disk by the head, said disk unit comprising:

A humidity sensor for detecting humidity (Fig. 2, Element 3);  
And heating means for heating when said humidity sensor detects a humidity exceeding a predetermined humidity (Page 15, [0017]. Shimada teaches the use of a dehumidifying unit that eliminates the humidity produced inside the disk drive.).

Regarding Claim 20, Shimada teaches all the limitations of Claim 18. Shimada further teaches wherein said disk unit further comprises a second motor for driving said arm, and said heating means includes means for heating by conducting through said second motor a current which is unnecessary for operation of said arm, at time of stop of operation of said arm (Fig. 2, Block 7 and Page 15, [0018] and [0019]. Shimada teaches that when hard disk is inoperable, the controller emits an OFF signal, therefore disabling the hard disk and stopping the operation of the arm.).

Regarding Claim 21, Shimada teaches all the limitation of Claim 18. Shimada further teaches a heating apparatus (Fig. 2, Block 9).

Regarding Claim 32, Shimada teaches an information processing apparatus having a disk unit for performing reading and writing of information for a disk of the disk unit via an interface, said information processing apparatus comprising:

A temperature sensor for detecting a temperature (Fig. 2, Element 4);

And a control circuit for controlling a heating value of said disk unit in accordance with a temperature detected by said temperature sensor (Fig. 2, Element 7. Shimada teaches a controller that monitors the temperature in the disk drive.).

Regarding Claim 33, Shimada teaches all the limitations of Claim 32. Shimada further teaches wherein said control circuit causes a current to conduct through a fixed phase of a motor for rotating a disk of said disk unit, when said temperature sensor detects a temperature which is lower than a predetermined temperature (See [0018] and [0019]. Shimada teaches while the temperature is within an acceptable range, the controller does not disable the disk drive.).

Regarding Claim 34, Shimada teaches all the limitations of Claim 32. Shimada further teaches wherein when said temperature sensor detects a temperature which is out of a predetermined temperature range, said disk unit informs via said interface that said disk unit is not operable (Fig. 2, Elements 7, 29, and 30 and Page 15, [0018] and [0019]. In Fig. 2, Shimada teaches a CPU (30) that has a direct connection (29) to the controller (7), which informs the CPU whenever the hard disk is inoperable because of intolerable temperature and will not enable the hard disk unless the temperature is operable.).

Art Unit: 2697

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada (JP 5174565).

Regarding Claim 3, Shimada teaches all the limitations of Claim 3. Shimada fails to teach wherein said disk unit further comprises a second motor for driving said arm, and said heating means includes means for heating by conducting through said second motor a current which is unnecessary for operation of said arm. It is obvious to a person of ordinary skill in the art to know that by energizing the second motor with an operational current the medium is heating the medium without actually using the second motor. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order to make the medium able to heat the second motor in order to energize the motor for any operations that the medium would be able to perform.

Claims 2, 5, 14, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada in view of Li (US Patent No. 6, 385, 007).

Regarding Claim 2 and 19, Shimada teaches all the limitations of Claim 1 and 18, respectively. Shimada fails to teach wherein said disk unit further comprises a first motor for driving said a disk, and said heating means includes means for heating by conducting a current through a fixed phase of said first motor. However, this feature is



Art Unit: 2697

well known in the art as disclosed by Li, wherein it teaches that the disk drive device receives in the Peltier element (monitors the temperature in the disk drive) the heat developed by the spindle motor (Pat. No. 6, 385, 007; Col. 5, Lines 8-30). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the medium to have a motor and provide heat to the motor in order to make the driving motor operable when performing read and /or write operations.

Regarding Claims 5, 14 and 22, Shimada teaches all the limitations of Claim 1, 13 and 18, respectively. Shimada fails to teach that a Peltier element is included in a heating means. However, this feature is well known in the art as disclosed by Li, wherein it teaches a Peltier element used for controlling the temperature in a disk drive (Pat. No. 6, 385, 007; Col. 9, Line 62 to Col. 10, Line 6). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the medium to have a Peltier element in order to control the temperature of the medium in order to prevent the hard disk to be inoperable when performing recording and/or reproducing operations.

Claim 6 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada in view of Olarig et al. (US Patent No. 5, 280, 603).

Regarding Claim 6, Shimada teaches a disk unit in which an arm having a head on a top is actuated, while a disk is rotated, so that a position of the head is moved with respect to the disk to perform write and read of data to and from the disk by the head, said disk unit comprising:

Art Unit: 2697

A temperature sensor for detecting a temperature (JP 5174565; Fig. 2, Element 4);

A control circuit (JP 5174565; Fig. 2, Element 7).

Shimada further discloses that the temperature detector send temperature values read in the disk drive to the controller are determined by a timer (Pat. JP 5174565; Page 9, [0009]). Shimada fails to teach a clock generating circuit for generating a plurality of sorts of operational clocks which are mutually different in frequency; and a control circuit for controlling an operation of said disk unit in such a manner that upon receipt of any one sort of operational clock from said clock generating circuit, a processing is performed at a processing speed according to a frequency of the received operational clock, wherein said control circuit operates at an operational clock different in accordance with a temperature. However, this feature is known in the art, as disclosed by Olarig et al., wherein it teaches a memory controller device that the frequency changes according to the temperature read by the temperature sensor (Pat. No. 6, 564, 288; Col. 4, Lines 33-47). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order to make the controller able to depend on the temperature read by the sensor in order to prevent the excessive temperature to damage the disk.

Regarding Claim 6, Shimada teaches a disk unit in which an arm having a head on a top is actuated, while a disk is rotated, so that a position of the head is moved with respect to the disk to perform write and read of data to and from the disk by the head, said disk unit comprising:

A humidity sensor for detecting a humidity (Fig. 2, Element 3);

A control circuit (Fig. 2, Element 7).

Shimada further discloses that the humidity detector send humidity values read in the disk drive to the controller are determined by a timer (Pat. JP 5174565; Page 9, [0009]). Shimada fails to teach a clock generating circuit for generating a plurality of sorts of operational clocks which are mutually different in frequency; and a control circuit for controlling an operation of said disk unit in such a manner that upon receipt of any one sort of operational clock from said clock generating circuit, a processing is performed at a processing speed according to a frequency of the received operational clock, wherein said control circuit operates at an operational clock different in accordance with a humidity. However, this feature is known in the art, as disclosed by Olarig et al., wherein it teaches a memory controller device that the frequency changes according to the temperature read by the temperature sensor (Pat. No. 6, 564, 288; Col. 4, Lines 33-47. It would have been obvious that if the temperature sensor could be replaced by a humidity sensor in order to also monitor the humidity generated by the disk.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order to make the controller able to depend on the humidity read by the sensor in order to prevent the excessive humidity to damage the disk.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagisawa (US Patent 6, 236, 532) in view of Branc et al. (EP 0402960). Yanagisawa

Art Unit: 2697

teaches a disk unit in which an arm having a head on a top is actuated, while a disk is rotated, so that a position of the head is moved with respect to the disk to perform write and read of data to and from the disk by the head (Pat. No. 6, 236, 532; See Abstract), Yanagisawa fails to teach of a double-structure for the disk drive. However, this feature is well known in the art as disclosed by Branc et al., wherein it teaches an inner and outer body for a disk drive isolating system in which the disk is protected from the environment (EP 0402960; See Abstract). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Yanagisawa's invention in order for the medium to be able to have a double-structure body in order to protect the medium from temperature and humidity that is found on the medium's surroundings.

Regarding Claim 30, Yanagisawa and Branc et al. teach all the limitations of Claim 28. Branc et al. further teach a humidity sensor between the first outline and the second outline (EP 040296; Col. 4, Lines 34-45. Branc et al. teaches a humidity sensor called humidistat.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Yanagisawa in order for the medium to have a humidity sensor in order for the medium to be able to monitor the disk drive in an industrial environment without humidity being able to affect the disk drive.

Regarding Claim 31, Yanagisawa and Branc et al. teach all the limitations of Claim 28. Yanagisawa further discloses that the housing has an air vent, which permits air to flow through in the disk drive (Pat. No. 6, 236, 532; See Abstract). Yanagisawa fails to teach the use of a second outline. However, this feature is well known in the art

Art Unit: 2697

as disclosed by However, this feature is well known in the art as disclosed by Branc et al., wherein it teaches an inner and outer body for a disk drive isolating system in which it has a vent (EP 0402960; See Fig. 4, Element 31). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Yanagisawa's invention in order for the medium to be able to have a double-structure body in order to protect the medium from temperature and humidity that is found on the medium's surroundings.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagisawa and Branc et al. as applied to claim 28 above, and further in view of O'Sullivan (US Patent No. 4, 980, 786). Yanagisawa and Branc et al. teach all the limitations of Claim 28. Yanagisawa and Branc et al. fail to teach that the first housing has a insulator. However, this feature is disclosed by O'Sullivan, wherein it teaches a disk drive housing that has an insulator (Patent No. 4, 980, 786; See Abstract). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Yanagisawa in order to for the housing to have an insulator in order to isolate adequately the disk medium.

Claims 15 and 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada in view of Mori et al. (US Patent No. 5, 594, 603).

Regarding Claim 15, Shimada teach all the limitations of Claim 13. Shimada fail to teach that the controller informs a host whenever the temperature exceeds a third temperature. However, this feature is well known in the art as disclosed by Mori et al., wherein it informs the host whenever a temperature is performing a countermeasure

Art Unit: 2697

whenever the temperature exceeds a given temperature (Pat. No. 5, 594, 603; Col. 16, Lines 21-30). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the medium to be able to inform to the host whenever the information exceed a given threshold in order to do perform a countermeasure and control the temperature in the disk drive whenever it surpasses its maximum value.

Regarding Claim 17, Shimada teach all the limitations of Claim 13. Shimada fail to teach that the controller informs a host whenever the temperature exceeds a third temperature and informs that the medium is not operable. However, this feature is well known in the art as disclosed by Mori et al., wherein it informs the host whenever a temperature is performing a countermeasure whenever the temperature exceeds a given temperature (Pat. No. 5, 594, 603; Col. 16, Lines 21-30). It is obvious that if the medium informs when the medium exceed a given threshold, then the medium can be able to inform that the medium is inoperable (Shimada's invention inactivates the medium if the temperature is too high. See JP 174565; [0018] and [0019]). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the medium to be able to inform to the host whenever the information exceed a given threshold in order to do perform a countermeasure and control the temperature in the disk drive whenever it surpasses its maximum value.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada in view of Fukuzono et al. (US Patent No. 6, 409, 380). Shimada teaches all the

Art Unit: 2697

limitations of Claim 23. Shimada fails to teach wherein said disk unit further comprises a communication circuit for communication with a host, and when said humidity a sensor detects a humidity exceeding the predetermined humidity, said communication circuit informs the host that heating is performed. However, this feature is known in the art as disclosed by Fukuzono et al., wherein it teaches a magnetic recording medium wherein it measures the humidity and displays a message whether the humidity exceeded a predetermined humidity (Col. 5, Lines 1-54. Fukuzono et al. teach that by a measuring the temperature the medium calculates the dew or humidity at that precise time and that is displayed in the display.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the medium to be able to inform to the host whenever the information exceed a given threshold in order to do perform a countermeasure and control the humidity in the disk drive whenever it surpasses its maximum value.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada in view of Okada et al. (US Patent No. 6, 530, 034).

Regarding Claim 11, Shimada teaches a disk unit in which an arm having a head on a top is actuated, while a disk is rotated, so that a position of the head is moved with respect to the disk to perform write and read of data to and from the disk by the head (It is inherent that a disk unit has an arm (also called transducer) to perform write/read operations. See Fig. 2, block 5. Shimada teaches a disk unit.), said disk unit comprising:

A temperature sensor for detecting a temperature (JP 5174565; Fig. 2, Element 4);

Shimada fails to teach an access circuit for accessing said disk, wherein said access circuit performs, when writing of data into said disk is performed in a case where said temperature sensor detects a temperature which is out of a predetermined temperature range, a writing confirmation operation for comparing written data with read data through reading data written into said disk. However, this feature is known in the art as disclosed by Okada et al., wherein it teaches that a circuit that includes a thermal asperity detector that is able to detect an increase in temperature (known in the art as an asperity) during a writing operation and compares the data to check if any data recovery needs to be done in the medium (Pat. No. 6, 530, 034; See Fig. 1, Fig. 4 and Col. 2, Lines 18-31). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the medium to be able to detect any rise in temperature in order to recover the data being lost during a data recording operation.

Regarding Claim 12, Shimada and Okada et al. teach all the limitations of Claim 11. Okada et al further teach wherein said access circuit again writes the written data into a same area on said disk and again reads the written data in a case where it is decided by the writing confirmation operation that the written data is not coincident with the read data, and said access circuit writes the written data into a different area on said disk in a case where it is again decided by the writing confirmation operation that the written data is not coincident with the read data (Pat. No. 6, 530, 034; Fig. 4). It would



Art Unit: 2697

have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the medium to be able to detect any rise in temperature in order to recover the data being lost during a data recording operation.

Claim 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yotsuya et al. (US Patent No. 6, 335, 843) in view of Okada et al. (US Patent No. 6, 530, 034) and Schanezer et al. (US Patent No. 6, 046, 871).

Regarding Claim 26, Yotsuya et al. teach a disk unit in which an arm having a head on top is actuated, while a disk is rotated, so that a position of the head is moved with respect to the disk to perform write and read of data to and from the disk by the head (See Fig. 6), said disk unit comprising:

A humidity sensor for detecting a humidity (See Fig. 6, Element 91);

And an access circuit for accessing said disk (See Fig. 6. Yotsuya et al. teach a circuit that accesses the disk to perform reading/writing operations),

Wherein said access circuit performs, when writing of data into said disk is performed in a case where said humidity sensor detects a humidity exceeding a predetermined humidity (See Fig. 14, wherein Yotsuya et al. teach that when the medium exceeds a predetermined humidity while performing a writing operation in the medium.).

Art Unit: 2697

Yostuya et al. fails to teach that it performs a data verification after the medium detect that the humidity is exceeded. However, this feature is well known in the art as disclosed by Okada et al., wherein it teaches that a circuit that includes a thermal asperity detector that is able to detect an increase in temperature (known in the art as an asperity) during a writing operation and compares the data to check if any data recovery needs to be done in the medium (Pat. No. 6, 530, 034; See Fig. 1, Fig. 4 and Col. 2, Lines 18-31). It would have been obvious to a person of ordinary skill in the art to know that humidity and temperature are environmental factors that must be avoided in order to prevent a failure during reading and writing of the disk drive (Pat. No. 6, 046, 871; Col. 1, Lines 47-63). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Yotsuda et al.'s invention in order to monitor and restore the data being lost during a data recording operation.

Regarding Claim 27, Yotsuya et al., Okada et al. (US Patent No. 6, 530, 034) and Schanezer et al. teach all the limitations of Claim 26. Okada et al further teach wherein said access circuit again writes the written data into a same area on said disk and again reads the written data in a case where it is decided by the writing confirmation operation that the written data is not coincident with the read data, and said access circuit writes the written data into a different area on said disk in a case where it is again decided by the writing confirmation operation that the written data is not coincident with the read data (Pat. No. 6, 530, 034; Fig. 4). It would have been obvious to a person of ordinary skill in the art to know that humidity and temperature are environmental factors that must be avoided in order to prevent a failure during reading and writing of the disk drive

Art Unit: 2697

(Pat. No. 6, 046, 871; Col. 1, Lines 47-63). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Yotsuda et al.'s invention in order to monitor and restore the data being lost during a data recording operation.

### ***Allowable Subject Matter***

Claims 10 and 25 are allowed. The prior art alone or inter alia teaches a disk unit that comprises a thermal and humidity sensor and a controller that is able to read and write by a use of an arm actuator. But the prior art fails to teach an outline having a door which opens and closes in accordance with a control, wherein said control circuit causes said door to open when said humidity sensor detects a humidity or temperature exceeding a predetermined humidity.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is 703-305-8411. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on 703-305-4717. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-6743 for regular communications and 703-308-6743 for After Final communications.

Art Unit: 2697

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9000.

gpr  
July 12, 2003



DAVID HUDSPETH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600